

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Currently Amended) A microfluidic mixer apparatus comprising:

a substrate having an aperture formed therein; and

at least two channels also formed within the substrate such as to terminate at the aperture, where each of the at least two channels which terminates at the aperture terminates only obliquely with respect to the aperture such as to effect within the aperture a swirling mixing of at least two reagents introduced into the aperture through the at least two channels, and where the at least two channels are arranged to be parallel to one another at least in the vicinity of the aperture.

2. (Original) The microfluidic mixer apparatus of claim 1 further comprising;

a cover plate covering the substrate and the aperture; and

an outlet port assembled to the cover plate and centered over the aperture.

3. (Canceled)

4. (Original) The microfluidic mixer apparatus of claim 1 wherein the aperture is formed in a geometric shape selected from the group consisting of circular geometric shapes, elliptical geometric shapes, irregular continuous sided geometric shapes and polygonal geometric shapes.

5. (Currently Amended) A method for operating a microfluidic mixer apparatus comprising;

providing a microfluidic mixer apparatus comprising

a substrate having an aperture formed therein; and

at least two channels also formed within the substrate such as to terminate at the aperture, where each of the at least two channels which terminates at the aperture terminates only obliquely with respect to the aperture such as to effect within the aperture a swirling mixing of at least two reagents introduced into the aperture through the at least two channels and where the at least two channels are arranged to be parallel with one another at least in the vicinity of the aperture; and introducing into the aperture the at least two reagents through the at least two channels.

6. (Original) The method of claim 5 further comprising;

a cover plate covering the substrate and the aperture; and

an outlet port assembled to the cover plate and centered over the aperture.

7. (Cancelled)

8. (Original) The method of claim 5 wherein the aperture is formed in a geometric shape selected from the group consisting of circular geometric shapes,

elliptical geometric shapes, irregular continuous sided geometric shapes and polygonal geometric shapes.

9-18. Cancelled

19. (Currently Amended) A microfluidic mixer apparatus comprising;

a substrate having an aperture formed therein; ~~and~~

an outlet port providing access to the aperture; and

a total of two channels also formed within the substrate such as to terminate at the aperture, where each of the two channels which terminates at the aperture terminates only obliquely with respect to the aperture such as to effect within the aperture a swirling mixing of at least two reagents introduced into the aperture through the ~~at least two channels~~, and where the two channels are arranged to be parallel with one another at least in the vicinity of the aperture.

20. (Currently Amended) A method for operating a microfluidic mixer apparatus comprising;

providing a microfluidic mixer apparatus comprising

a substrate having an aperture formed therein; ~~and~~

an outlet providing access to the aperture; and

a total of two channels also formed within the substrate such as to terminate at the aperture, where each of the two channels which terminates at the aperture terminates only

obliquely with respect to the aperture such as to effect within the aperture a swirling mixing of at least two reagents introduced into the aperture through the ~~at least~~ two channels, and where the two channels are arranged to be parallel with one another at least in the vicinity of the aperture;
and

introducing into the aperture the at least two reagents through the ~~at least~~ two channels.